AARTN ASSOCIATES

The Modern Construction Solutions

#1059, MIG-A Sector, Opp. Railwheel Factory,
Yelahanka New Town, Bangalore - 64
Ph : 8048505503 | Email : aartnassociates@gmail.com

Test Result of Inter Lock pavers

IS: 516 - 1959 | Date: 30/07/2021

Name of Work : Comprehensive Development works in ward No. 03 Attur

Client	Bruhat Bengalore Mahanagara Palike (BBMP) , Yelahanka Zone, Bengal
Contractor	B.B Umesh (S.M.L.P Asphats)
Customer Ref	EE(PROJECT)/YNK ZONE/WO/173/2019-20
Source of Sam	Sample supplied by Agency
Sample Type	Inter Lock pavers
Date of Test	30/07/2021
Location	

Sl. No	Details	Flexural Strength	Compressive Strength	Aveerage Compressive Strength
		mpa	N/mm^2	N/mm^2
1	Paver Block	3.97	38.52	37.92
2	Paver Block	4.08	36.98	
3	Paver Block	3.92	38.27	

Remarks :

AARTN ASSOCIATES DATE ... BANGALORE

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

Scanned by TapScanner

AARTN ASSOCIATES

The Modern Construction Solutions

#1059, MIG-A Sector, Opp. Railwheel Factory,
Yelahanka New Town, Bangalore - 64
Ph : 8048505503 | Email : aartnassociates@gmail.com

Test Result of Inter Lock pavers

IS: 516 - 1959 — Date: 30/07/2021

Name of Work : Comprehensive Development works in ward No. 03 Attur

Client	Bruhat Bengalore Mahanagara Palike (BBMP) , Yelahanka Zone, Bengal
Contractor	B.B Umesh (S.M.L.P Asphats)
Customer Ref	EE(PROJECT)/YNK ZONE/WO/173/2019-20
Source of Sam	Sample supplied by Agency
Sample Type	Inter Lock pavers
Date of Test	30/07/2021
Location	

Sl. No	Details	Flexural Strength	Compressive Strength	Aveerage Compressive Strength
		mpa	N/mm²	N/mm²
1	Paver Block	3.99	36.98	37.41
2	Paver Block	4.10	38.52	
3	Paver Block	3.94	36.73	

Remarks :

AARTN ASSOCIATES BANGALORE

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

Scanned by TapScanner

AARTN ASSOCIATES
The Modern Construction Solutions
#1059, MIG-A Sector, Opp. Railwheel Factory,
Yelahanka New Town, Bangalore - 64
Ph : 8048505503 | Email : aartnassociates@gmail.com

Test Result of Inter Lock pavers

IS: 516 - 1959 — Date: 10/08/2021

Name of Work : Comprehensive Development works in ward No. 03 Attur

Client	Bruhat Bengalore Mahanagara Palike (BBMP) , Yelahanka Zone, Bengal
Contractor	B.B Umesh (S.M.L.P Asphats)
Customer Refe	EE(PROJECT)/YNK ZONE/WO/173/2019-20
Source of Sam	Sample supplied by Agency
Sample Type	Inter Lock pavers
Date of Test	10/08/2021
Location	

Sl. No	Details	Flexural Strength	Compressive Strength	Aveerage Compressive Strength
		mpa	N/mm^2	N/mm^2
1	Paver Block	3.95	37.25	37.68
2	Paver Block	4.06	38.79	
3	Paver Block	4.00	37.00	

Remarks :

AARTN ASSOCIATES

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

Scanned by TapScanner

AARTN ASSOCIATES

The Modern Construction Solutions

#1059, MIG-A Sector, Opp. Railwheel Factory,
Yelahanka New Town, Bangalore - 64
Ph : 8048505503 | Email : aartnassociates@gmail.com

Test Result of Inter Lock pavers

IS: 516 - 1959 — Date: 18/08/2021

Name of Work : Comprehensive Development works in ward No. 03 Attur

Client	Bruhat Bengalore Mahanagara Palike (BBMP) , Yelahanka Zone, Bengal
Contractor	B.B Umesh (S.M.L.P Asphats)
Customer Refe	EE(PROJECT)/YNK ZONE/WO/173/2019-20
Source of Sam	Sample supplied by Agency
Sample Type	Inter Lock pavers
Date of Test	18/08/2021
Location	

Sl. No	Details	Flexural Strength	Compressive Strength	Aveerage Compressive Strength
		mpa	N/mm^2	N/mm^2
1	Paver Block	4.25	39.12	39.55
2	Paver Block	4.36	40.66	
3	Paver Block	4.30	38.87	

Remarks :

AARTN ASSOCIATES ★ BANGALORE ★ DATE

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

Scanned by TapScanner

AARTN ASSOCIATES

The Modern Construction Solutions

#1059, MIG-A Sector, Opp. Railwheel Factory,
Yelahanka New Town, Bangalore - 64
Ph : 8048505503 | Email : aartnassociates@gmail.com

Test Result of Inter Lock pavers

IS: 516 - 1959 | Date: 24/02/2021

Name of Work : Comprehensive Development works in ward No. 03 Attur

Client	Bruhat Bengalore Mahanagara Palike (BBMP) , Yelahanka Zone, Bengal
Contractor	B.B Umesh (S.M.L.P Asphats)
Customer Ref	EE(PROJECT)/YNK ZONE/WO/173/2019-20
Source of Sam	Sample supplied by Agency
Sample Type	Inter Lock pavers
Date of Test	24/02/2021
Location	

Sl. No	Details	Flexural Strength	Compressive Strength	Aveerage Compressive Strength
		mpa	N/mm^2	N/mm^2
1	Paver Block	3.99	39.56	39.99
2	Paver Block	4.10	41.1	
3	Paver Block	4.04	39.31	

Remarks :

AARTN ASSOCIATES BANGALORE

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

Scanned by TapScanner

AARTN ASSOCIATES

The Modern Construction Solutions

#1059, MIG-A Sector, Opp. Railwheel Factory,
Yelahanka New Town, Bangalore - 64
Ph : 8048505503 | Email : aartnassociates@gmail.com

Test Reults of Gradation for GSB (Granular Sub Base)

IS: 2386 Part-8 &29	Date: 23/06/2021

Name of Work : Comprehensive Development works in ward No. 03 Attur

Client	Bruhat Bengalore Mahanagara Palike (BBMP) ,Yelahanka Zone,Bengaluru.
Contractor	B.B Umesh (S.M.L.P Asphalts)
Customer Reference	EE(PROJECT)/YNK ZONE/WO/173/2019-20
Source of Sample	Sample supplied by Agency
Sample Condition	Satisfactory
Type of Mix	Coarse Aggregate for GSB (Granular Sub Base)
Date of Test	23/06/2021
Location	

Description of materials:	GSB-V		
MDD (gm/cc) =	2.180	OMC(%) =	5.20
Bulk Density of sand:	1.395	Sand retained in cone (gm)=	395.4

FIELD DENSITY BY SAND REPLACEMENT METHOD

SL.no	Particulars	S-1	S-2
1	Wt of soil from hole (w2) gm:	2415.6	2395.4
2	Wt of sand + cylinder before pouring(gm) (w3)	7180	7180
3	Wt of sand+ cylinder after pouring (gm)(w4)	5286.5	5306.3
4	Wt of sand in hole (gm)(w5= w3-w4-w1)	1498.1	1478.3
5	Volume of sand in hole (V = W5/Ysand)	1073.91	1059.71
6	Bulk density (gm/cc) (Yb= W2/v)	2.249	2.260
7	Moisture meter reading (%)	5.30	5.35
8	Dry density (g/cc) Yd = Yb /(1 + w/100)	2.152	2.153
9	Degree of compaction achieved, (%) (Yd/mdd)*100)	**98.74**	**98.75**
10	Required degree of compaction, (%) ,As per MORT&H 5th specification.	**98.74**	

Remarks:Found to be Satisfactory.

AARTN ASSOCIATES ★ DATE ★ BANGALORE

...gineer
... Division
Yelahanka Zone
BBMP, Bangalore - 92

Scanned by TapScanner

AARTN ASSOCIATES

The Modern Construction Solutions

#1059, MIG-A Sector, Opp. Railwheel Factory,
Yelahanka New Town, Bangalore - 64
Ph : 8048505503 | Email : aartnassociates@gmail.com

Test Reults of Gradation for GSB (Granular Sub Base)

IS: 2386 Part-8 &29	Date: 23/06/2021

Name of Work : Comprehensive Development works in ward No. 03 Attur

Client	Bruhat Bengalore Mahanagara Palike (BBMP) ,Yelahanka Zone,Bengaluru.
Contractor	B.B Umesh (S.M.L.P Asphalts)
Customer Reference	EE(PROJECT)/YNK ZONE/WO/173/2019-20
Source of Sample	Sample supplied by Agency
Sample Condition	Satisfactory
Type of Mix	Coarse Aggregate for GSB (Granular Sub Base)
Date of Test	23/06/2021
Location	

Description of materials:	GSB-V		
MDD (gm/cc) =	2.180	OMC(%) =	5.20
Bulk Density of sand:	1.395	Sand retained in cone (gm)=	395.4

FIELD DENSITY BY SAND REPLACEMENT METHOD

SL.no	Particulars	S-1	S-2
1	Wt of soil from hole (w2) gm:	2412.3	2400.5
2	Wt of sand + cylinder before pouring(gm) (w3)	7180	7180
3	Wt of sand+ cylinder after pouring (gm)(w4)	5289.6	5298.9
4	Wt of sand in hole (gm)(w5= w3-w4-w1)	1495	1485.7
5	Volume of sand in hole (V = W5/Ysand)	1071.684588	1065.02
6	Bulk density (gm/cc) (Yb= W2/v)	2.251	2.254
7	Moisture meter reading (%)	5.25	5.15
8	Dry density (g/cc) Yd = Yb /(1 + w/100)	2.154	2.147
9	Degree of compaction achieved, (%) (Yd/mdd)*100)	**98.81**	**98.47**
10	Required degree of compaction, (%) ,As per MORT&H 5th specification.	**98.64**	

Remarks:Found to be Satisfactory.

AARTN ASSOCIATES DATE BANGALORE

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

Scanned by TapScanner

AARTN ASSOCIATES

The Modern Construction Solutions

#1059, MIG-A Sector, Opp. Railwheel Factory,
Yelahanka New Town, Bangalore - 64
Ph : 80488505503 | Email : aartnassociates@gmail.com

Test Reults of Gradation for GSB (Granular Sub Base)

IS: 2386 Part-8 &29	Date: 23/06/2021

Name of Work : Comprehensive Development works in ward No. 03 Attur

Client	Bruhat Bengalore Mahanagara Palike (BBMP) ,Yelahanka Zone,Bengaluru.
Contractor	B.B Umesh (S.M.L.P Asphalts)
Customer Reference	EE(PROJECT)/YNK ZONE/WO/173/2019-20
Source of Sample	Sample supplied by Agency
Sample Condition	Satisfactory
Type of Mix	Coarse Aggregate for GSB (Granular Sub Base)
Date of Test	23/06/2021
Location	

Description of materials:	GSB-V		
MDD (gm/cc) =	2.180	OMC(%) =	5.20
Bulk Density of sand:	1.395	Sand retained in cone (gm)=	395.4

SL.no	FIELD DENSITY BY SAND REPLACEMENT METHOD Particulars	S-1	S-2
1	Wt of soil from hole (w2) gm:	2410.5	2404.6
2	Wt of sand + cylinder before pouring(gm) (w3)	7180	7180
3	Wt of sand+ cylinder after pouring (gm)(w4)	5285.4	5301.5
4	Wt of sand in hole (gm)(w5= w3-w4-w1)	1499.2	1483.1
5	Volume of sand in hole (V = W5/Ysand)	1074.695341	1063.15
6	Bulk density (gm/cc) (Yb= W2/v)	2.243	2.262
7	Moisture meter reading (%)	5.20	5.30
8	Dry density (g/cc) Yd = Yb /(1 + w/100)	2.146	2.154
9	Degree of compaction achieved, (%) (Yd/mdd)*100)	**98.46**	**98.81**
10	Required degree of compaction, (%) ,As per MORT&H 5th specification.	**98.63**	

Remarks:Found to be Satisfactory.

AARTN ASSOCIATES DATE BANGALORE

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

Scanned by TapScanner

AARTN ASSOCIATES

The Modern Construction Solutions

#1059, MIG-A Sector, Opp. Railwheel Factory,
Yelahanka New Town, Bangalore - 64
Ph : 8048505503 | Email : aartnassociates@gmail.com

Test Reults of Gradation for GSB (Granular Sub Base)

MORT&H (Section 400, Table 400-1) — Date: 23/06/2021

Name of Work : Comprehensive Development works in ward No. 03 Attur

Client	Bruhat Bengalore Mahanagara Palike (BBMP) ,Yelahanka Zone,Bengaluru.
Contractor	B.B.Umesh (S.M.L.P Asphalts)
Customer Reference	EE(PROJECT)/YNK ZONE/WO/173/2019-20
Source of Sample	Sample supplied by Agency
Sample Condition	Satisfactory
Type of Mix	Coarse Aggregate for GSB (Granular Sub Base)-Grading V
Date of Test	23/06/2021
Total wt of the sample (gms):	11000

IS Sieve size (mm)	Weight retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Specifcations as per MORTH (Table 400-1)	Remarks
75	0	0	0.0	100	100	Satisfactory
53	315	315	2.9	97.1	80-100	Satisfactory
26.5	2259	2574	23.4	76.6	55-90	Satisfactory
9.5	2179	4753	43.2	56.8	35-65	Satisfactory
4.75	2251	7004	63.7	36.3	25-50	Satisfactory
2.36	1820	8824	80.2	19.8	10-20	Satisfactory
0.85	1212	10036	91.2	8.8	2-10	Satisfactory
0.425	911	10947	99.5	0.5	0-5	Satisfactory

Remarks: Satisfactory

AARTN ASSOCIATES DATE BANGALORE

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

Scanned by TapScanner

AARTN ASSOCIATES

The Modern Construction Solutions

#1059, MIG-A Sector, Opp. Railwheel Factory,
Yelahanka New Town, Bangalore - 64
Ph : 8048505503 | Email : aartnassociates@gmail.com

Test Report of Aggregate Impact Value

IS: 2386 Part-IV — Date: 23/06/2021

Name of Work : Comprehensive Development works in ward No. 03 Attur

Client	Bruhat Bengalore Mahanagara Palike (BBMP) , Yelahanka Zone, Bengaluru.
Contractor	B.B Umesh (S.M.L.P Asphalts)
Customer Reference	EE(PROJECT)/YNK ZONE/WO/173/2019-20
Source of Sample	Sample supplied by Agency
Sample Condition	Satisfactory
Sample Type	Coarse Aggregate for GSB (Granular Sub Base)
Date of Test	23/06/2021

Sl. No	Particulars of Observations	Index	Test-1	Test-2
1	Total weight of the surface dry sample (passing 12.5mm and retained on 10mm sieve)	A	300.2	300.4
2	Weight of fraction passing 2.36 mm sieve after giving 15 blows	B	75.6	74.25
3	Weight of fraction passing 2.36 mm sieve after giving 15 blows	C	224.15	225.9
4	Total weight of (B+C) is less than the initial weight (Weight A) by more than one gram the result shall be discarded and a fresh test made	A-(B+C)	0.45	0.25
5	Aggregate impact value	(B/A)x100	25.18	24.72
6	Aggregate impact value (Mean of two tests)	Percentage	24.95	

AARTN ASSOCIATES DATE BANGALORE

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

Scanned by TapScanner

AARTN ASSOCIATES

The Modern Construction Solutions

#1059, MIG-A Sector, Opp. Railwheel Factory,
Yelahanka New Town, Bangalore - 64
Ph : 8048505503 | Email : aartnassociates@gmail.com

Test Reults of Gradation for GSB (Granular Sub Base)

IS: 2386 Part-8 &29	Date: 01/07/2021

Name of Work : Comprehensive Development works in ward No. 03 Attur

Client	Bruhat Bengalore Mahanagara Palike (BBMP) ,Yelahanka Zone,Bengaluru.
Contractor	B.B Umesh (S.M.L.P Asphalts)
Customer Reference	EE(PROJECT)/YNK ZONE/WO/173/2019-20
Source of Sample	Sample supplied by Agency
Sample Condition	Satisfactory
Type of Mix	Coarse Aggregate for GSB (Granular Sub Base)
Date of Test	01/07/2021
Location	

Description of materials:	GSB-V		
MDD (gm/cc) =	2.180	OMC(%) =	5.20
Bulk Density of sand:	1.395	Sand retained in cone (gm)=	395.4

FIELD DENSITY BY SAND REPLACEMENT METHOD

SL.no	Particulars	S-1	S-2
1	Wt of soil from hole (w2) gm:	2425.2	2415.5
2	Wt of sand + cylinder before pouring(gm) (w3)	7180	7180
3	Wt of sand+ cylinder after pouring (gm)(w4)	5274.2	5288.6
4	Wt of sand in hole (gm)(w5= w3-w4-w1)	1510.4	1496
5	Volume of sand in hole (V = W5/Ysand)	1082.724014	1072.40
6	Bulk density (gm/cc) (Yb= W2/v)	2.240	2.252
7	Moisture meter reading (%)	5.05	5.30
8	Dry density (g/cc) Yd = Yb /(1 + w/100)	2.143	2.145
9	Degree of compaction achieved, (%) (Yd/mdd)*100)	**98.32**	**98.40**
10	Required degree of compaction, (%) ,As per MORT&H 5th specification.	**98.36**	

Remarks:Found to be Satisfactory.

AARTN ASSOCIATES BANGALORE

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

Scanned by TapScanner

AARTN ASSOCIATES

The Modern Construction Solutions

#1059, MIG-A Sector, Opp. Railwheel Factory,
Yelahanka New Town, Bangalore - 64
Ph : 8048505503 | Email : aartnassociates@gmail.com

Test Reults of Gradation for GSB (Granular Sub Base)

IS: 2386 Part-8 &29	Date: 01/07/2021

Name of Work : Comprehensive Development works in ward No. 03 Attur

Client	Bruhat Bengalore Mahanagara Palike (BBMP) ,Yelahanka Zone,Bengaluru.
Contractor	B.B Umesh (S.M.L.P Asphalts)
Customer Reference	EE(PROJECT)/YNK ZONE/WO/173/2019-20
Source of Sample	Sample supplied by Agency
Sample Condition	Satisfactory
Type of Mix	Coarse Aggregate for GSB (Granular Sub Base)
Date of Test	01/07/2021
Location	

Description of materials:	GSB-V		
MDD (gm/cc) =	2.180	OMC(%) =	5.20
Bulk Density of sand:	1.395	Sand retained in cone (gm)=	395.4

FIELD DENSITY BY SAND REPLACEMENT METHOD

SL.no	Particulars	S-1	S-2
1	Wt of soil from hole (w2) gm:	2421.2	2407.5
2	Wt of sand + cylinder before pouring(gm) (w3)	7180	7180
3	Wt of sand+ cylinder after pouring (gm)(w4)	5287.1	5298.3
4	Wt of sand in hole (gm)(w5= w3-w4-w1)	1497.5	1486.3
5	Volume of sand in hole (V = W5/Ysand)	1073.476703	1065.45
6	Bulk density (gm/cc) (Yb= W2/v)	2.255	2.260
7	Moisture meter reading (%)	5.20	5.30
8	Dry density (g/cc) Yd = Yb /(1 + w/100)	2.158	2.152
9	Degree of compaction achieved, (%) (Yd/mdd)*100)	**99.01**	**98.72**
10	Required degree of compaction, (%) ,As per MORT&H 5th specification.	**98.86**	

Remarks:Found to be Satisfactory.

AARTN ASSOCIATES DATE BANGALORE

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

Scanned by TapScanner

AARTN ASSOCIATES

The Modern Construction Solutions

#1059, MIG-A Sector, Opp. Railwheel Factory,
Yelahanka New Town, Bangalore - 64
Ph : 8048505503 | Email : aartnassociates@gmail.com

Test Reults of Gradation for GSB (Granular Sub Base)

MORT&H (Section 400, Table 400-1) — Date: 01/07/2021

Name of Work : Comprehensive Development works in ward No. 03 Attur

Client	Bruhat Bengalore Mahanagara Palike (BBMP) ,Yelahanka Zone,Bengaluru.
Contractor	B.B Umesh (S.M.L.P Asphats)
Customer Reference	EE(PROJECT)/YNK ZONE/WO/173/2019-20
Source of Sample	Sample supplied by Agency
Sample Condition	Satisfactory
Type of Mix	Coarse Aggregate for GSB (Granular Sub Base)-Grading V
Date of Test	01/07/2021
Total wt of the sample (gms):	11000

IS Sieve size (mm)	Weight retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Specifcations as per MORTH (Table 400-1)	Remarks
75	0	0	0.0	100	100	Satisfactory
53	315	325	3.0	97.0	80-100	Satisfactory
26.5	2259	2579	23.4	76.6	55-90	Satisfactory
9.5	2179	4765	43.3	56.7	35-65	Satisfactory
4.75	2251	7025	63.9	36.1	25-50	Satisfactory
2.36	1820	9025	82.0	18.0	10-20	Satisfactory
0.85	1212	10250	93.2	6.8	2-10	Satisfactory
0.425	911	10925	99.3	0.7	0-5	Satisfactory

Remarks: Satisfactory

AARTN ASSOCIATES BANGALORE

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

Scanned by TapScanner

AARTN ASSOCIATES

The Modern Construction Solutions

#1059, MIG-A Sector, Opp. Railwheel Factory,
Yelahanka New Town, Bangalore - 64
Ph : 8048505503 | Email : aartnassociates@gmail.com

Test Report of Aggregate Impact Value

IS: 2386 Part-IV

Date: 01/07/2021

Name of Work : Comprehensive Development works in ward No. 03 Attur

Client	Bruhat Bengalore Mahanagara Palike (BBMP) , Yelahanka Zone, Bengaluru.
Contractor	B.B Umesh (S.M.L.P Asphats)
Customer Reference	EE(PROJECT)/YNK ZONE/WO/173/2019-20
Source of Sample	Sample supplied by Agency
Sample Condition	Satisfactory
Sample Type	Coarse Aggregate for GSB (Granular Sub Base)
Date of Test	01/07/2021

Sl. No	Particulars of Observations	Index	Test-1	Test-2
1	Total weight of the surface dry sample (passing 12.5mm and retained on 10mm sieve)	A	300.4	300.1
2	Weight of fraction passing 2.36 mm sieve after giving 15 blows	B	76.2	73.8
3	Weight of fraction passing 2.36 mm sieve after giving 15 blows	C	223.7	225.9
4	Total weight of (B+C) is less than the initial weight (Weight A) by more than one gram the result shall be discarded and a fresh test made	A-(B+C)	0.5	0.4
5.	Aggregate impact value	(B/A)x100	25.37	24.59
6	Aggregate impact value (Mean of two tests)	Percentage	24.98	

Remarks :

AARTN ASSOCIATES BANGALORE

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

Scanned by TapScanner

AARTN ASSOCIATES

The Modern Construction Solutions

#1059, MIG-A Sector, Opp. Railwheel Factory,
Yelahanka New Town, Bangalore - 64
Ph : 8048505503 | Email : aartnassociates@gmail.com

Test Reults of Gradation for GSB (Granular Sub Base)

IS: 2386 Part-8 &29	Date: 08/07/2021

Name of Work : Comprehensive Development works in ward No. 03 Attur

Client	Bruhat Bengalore Mahanagara Palike (BBMP) ,Yelahanka Zone,Bengaluru.
Contractor	B.B Umesh (S.M.L.P Asphalts)
Customer Reference	EE(PROJECT)/YNK ZONE/WO/173/2019-20
Source of Sample	Sample supplied by Agency
Sample Condition	Satisfactory
Type of Mix	Coarse Aggregate for GSB (Granular Sub Base)
Date of Test	08/07/2021
Location	

Description of materials:	GSB-V		
MDD (gm/cc) =	2.180	OMC(%) =	5.20
Bulk Density of sand:	1.395	Sand retained in cone (gm)=	395.4

SL.no	FIELD DENSITY BY SAND REPLACEMENT METHOD Particulars	S-1	S-2
1	Wt of soil from hole (w2) gm:	2403.8	2398.6
2	Wt of sand + cylinder before pouring(gm) (w3)	7180	7180
3	Wt of sand+ cylinder after pouring (gm)(w4)	5289.7	5302.5
4	Wt of sand in hole (gm)(w5= w3-w4-w1)	1494.9	1482.1
5	Volume of sand in hole (V = W5/Ysand)	1071.61	1062.44
6	Bulk density (gm/cc) (Yb= W2/v)	2.243	2.258
7	Moisture meter reading (%)	5.40	5.35
8	Dry density (g/cc) Yd = Yb /(1 + w/100)	2.147	2.150
9	Degree of compaction achieved, (%) (Yd/mdd)*100)	**98.47**	**98.63**
10	Required degree of compaction, (%) ,As per MORT&H 5th specification.	**98.55**	

Remarks:Found to be Satisfactory.

AARTN ASSOCIATES BANGALORE

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

Scanned by TapScanner

AARTN ASSOCIATES

The Modern Construction Solutions

#1059, MIG-A Sector, Opp. Railwheel Factory,
Yelahanka New Town, Bangalore - 64
Ph : 8048505503 | Email : aartnassociates@gmail.com

Test Reults of Gradation for GSB (Granular Sub Base)

MORT&H (Section 400, Table 400-1) — Date: 21/07/2021

Name of Work : Comprehensive Development works in ward No. 03 Attur

Client	Bruhat Bengalore Mahanagara Palike (BBMP) ,Yelahanka Zone,Bengaluru.
Contractor	B.B Umesh (S.M.L.P Asphats)
Customer Reference	EE(PROJECT)/YNK ZONE/WO/173/2019-20
Source of Sample	Sample supplied by Agency
Sample Condition	Satisfactory
Type of Mix	Coarse Aggregate for GSB (Granular Sub Base)-Grading V
Date of Test	21/07/2021
Total wt of the sample (gms):	11000

IS Sieve size (mm)	Weight retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Specifcations as per MORTH (Table 400-1)	Remarks
75	0	0	0.0	100	100	Satisfactory
53	315	315	2.9	97.1	80-100	Satisfactory
26.5	2259	2574	23.4	76.6	55-90	Satisfactory
9.5	2179	4753	43.2	56.8	35-65	Satisfactory
4.75	2251	7004	63.7	36.3	25-50	Satisfactory
2.36	1820	8824	80.2	19.8	10-20	Satisfactory
0.85	1212	10036	91.2	8.8	2-10	Satisfactory
0.425	911	10947	99.5	0.5	0-5	Satisfactory

Remarks: Satisfactory

AARTN ASSOCIATES BANGALORE

Executive Engineer
Division
Yelahanka Zone
BBMP, Bangalore - 92

Scanned by TapScanner

AARTN ASSOCIATES

The Modern Construction Solutions

#1059, MIG-A Sector, Opp. Railwheel Factory,
Yelahanka New Town, Bangalore - 64
Ph : 8048505503 | Email : aartnassociates@gmail.com

Test Report of Aggregate Impact Value

IS: 2386 Part-IV — **Date:** 21/07/2021

Name of Work : Comprehensive Development works in ward No. 03 Attur

Client	Bruhat Bengalore Mahanagara Palike (BBMP) , Yelahanka Zone, Bengaluru.
Contractor	B.B Umesh (S.M.L.P Asphats)
Customer Reference	EE(PROJECT)/YNK ZONE/WO/173/2019-20
Source of Sample	Sample supplied by Agency
Sample Condition	Satisfactory
Sample Type	Coarse Aggregate for GSB (Granular Sub Base)
Date of Test	21/07/2021

Sl. No	Particulars of Observations	Index	Test-1	Test-2
1	Total weight of the surface dry sample (passing 12.5mm and retained on 10mm sieve)	A	300.1	300.5
2	Weight of fraction passing 2.36 mm sieve after giving 15 blows	B	73.9	74
3	Weight of fraction passing 2.36 mm sieve after giving 15 blows	C	225.9	225.9
4	Total weight of (B+C) is less than the initial weight (Weight A) by more than one gram the result shall be discarded and a fresh test made	A-(B+C)	0.3	0.6
5	Aggregate impact value	(B/A)x100	24.63	24.63
6	Aggregate impact value (Mean of two tests)	Percentage	24.63	

Remarks :

AARTN ASSOCIATES BANGALORE

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

Scanned by TapScanner

AARTN ASSOCIATES

The Modern Construction Solutions

#1059, MIG-A Sector, Opp. Railwheel Factory,
Yelahanka New Town, Bangalore - 64
Ph : 8048505503 | Email : aartnassociates@gmail.com

Test Reults of Gradation for GSB (Granular Sub Base)

IS: 2386 Part-8 &29 | Date: 21/07/2021

Name of Work : Comprehensive Development works in ward No. 03 Attur

Client	Bruhat Bengalore Mahanagara Palike (BBMP) ,Yelahanka Zone,Bengaluru.
Contractor	B.B Umesh (S.M.L.P Asphats)
Customer Reference	EE(PROJECT)/YNK ZONE/WO/173/2019-20
Source of Sample	Sample supplied by Agency
Sample Condition	Satisfactory
Type of Mix	Coarse Aggregate for GSB (Granular Sub Base)
Date of Test	21/07/2021
Location	

Description of materials:	GSB-V		
MDD (gm/cc) =	2.180	OMC(%) =	5.20
Bulk Density of sand:	1.395	Sand retained in cone (gm)=	395.4

FIELD DENSITY BY SAND REPLACEMENT METHOD

SL.no	Particulars	S-1	S-2
1	Wt of soil from hole (w2) gm:	2420.2	2402.6
2	Wt of sand + cylinder before pouring(gm) (w3)	7180	7180
3	Wt of sand+ cylinder after pouring (gm)(w4)	5285.2	5299.6
4	Wt of sand in hole (gm)(w5= w3-w4-w1)	1499.4	1485
5	Volume of sand in hole (V = W5/Ysand)	1074.84	1064.52
6	Bulk density (gm/cc) (Yb= W2/v)	2.252	2.257
7	Moisture meter reading (%)	5.50	5.40
8	Dry density (g/cc) Yd = Yb /(1 + w/100)	2.155	2.150
9	Degree of compaction achieved, (%) (Yd/mdd)*100)	**98.84**	**98.60**
10	Required degree of compaction, (%) ,As per MORT&H 5th specification.	**98.72**	

Remarks:Found to be Satisfactory.

AARTN ASSOCIATES BANGALORE

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

Scanned by TapScanner

AARTN ASSOCIATES

The Modern Construction Solutions

#1059, MIG-A Sector, Opp. Railwheel Factory,
Yelahanka New Town, Bangalore - 64
Ph : 8048505503 | Email : aartnassociates@gmail.com

Test Reults of Gradation for GSB (Granular Sub Base)

MORT&H (Section 400, Table 400-1) — Date: 26/07/2021

Name of Work : Comprehensive Development works in ward No. 03 Attur

Client	Bruhat Bengalore Mahanagara Palike (BBMP) ,Yelahanka Zone,Bengaluru.
Contractor	B.B Umesh (S.M.L.P Asphats)
Customer Reference	EE(PROJECT)/YNK ZONE/WO/173/2019-20
Source of Sample	Sample supplied by Agency
Sample Condition	Satisfactory
Type of Mix	Coarse Aggregate for GSB (Granular Sub Base)-Grading V
Date of Test	26/07/2021
Total wt of the sample (gms):	11000

IS Sieve size (mm)	Weight retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Specifcations as per MORTH (Table 400-1)	Remarks
75	0	0	0.0	100	100	Satisfactory
53	315	315	2.9	97.1	80-100	Satisfactory
26.5	2259	2574	23.4	76.6	55-90	Satisfactory
9.5	2179	4753	43.2	56.8	35-65	Satisfactory
4.75	2251	7004	63.7	36.3	25-50	Satisfactory
2.36	1820	8824	80.2	19.8	10-20	Satisfactory
0.85	1212	10036	91.2	8.8	2-10	Satisfactory
0.425	911	10947	99.5	0.5	0-5	Satisfactory

Remarks: Satisfactory

AARTN ASSOCIATES ★ DATE ★ BANGALORE

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

Scanned by TapScanner

AARTN ASSOCIATES

The Modern Construction Solutions

#1059, MIG-A Sector, Opp. Railwheel Factory,
Yelahanka New Town, Bangalore - 64
Ph : 8048505503 | Email : aartnassociates@gmail.com

Test Report of Aggregate Impact Value

IS: 2386 Part-IV — Date: 26/07/2021

Name of Work : Comprehensive Development works in ward No. 03 Attur

Client	Bruhat Bengalore Mahanagara Palike (BBMP) , Yelahanka Zone, Bengaluru.
Contractor	B.B Umesh (S.M.L.P Asphats)
Customer Reference	EE(PROJECT)/YNK ZONE/WO/173/2019-20
Source of Sample	Sample supplied by Agency
Sample Condition	Satisfactory
Sample Type	Coarse Aggregate for GSB (Granular Sub Base)
Date of Test	26/07/2021

Sl. No	Particulars of Observations	Index	Test-1	Test-2
1	Total weight of the surface dry sample (passing 12.5mm and retained on 10mm sieve)	A	300.2	300.4
2	Weight of fraction passing 2.36 mm sieve after giving 15 blows	B	75.6	74.25
3	Weight of fraction passing 2.36 mm sieve after giving 15 blows	C	224.15	225.9
4	Total weight of (B+C) is less than the initial weight (Weight A) by more than one gram the result shall be discarded and a fresh test made	A-(B+C)	0.45	0.25
5	Aggregate impact value	(B/A)x100	25.18	24.72
6	Aggregate impact value (Mean of two tests)	Percentage	24.95	

AARTN ASSOCIATES BANGALORE DATE

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

Scanned by TapScanner